



TECHNOLOGY

## Service Date Interface Unit user guide



Jan 2010

issue 2

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### Service Data Interface Unit (SDIU) Description

The SDIU is a sophisticated state of the art microprocessor controlled special to type test equipment ,designed to reduce equipment down time and increase service efficiency by helping the field or hospital service engineer maintain & repair any of the range of Linet Active Pressure relieving mattresses.

The SDIU has a strong ABS equipment casing that is designed to survive in the engineers tool kit and workshop or field repair environments.

The Infra-red data link provides easy , reliable instant connection to any of the llnet range of SCUs without the need to open the Pump or additional external cables.

The SDIU can be used to simply check the Production details of the SCU or review and update the Fault and service data thus providing the service engineer with;

- A live service history of the unit without the need to contact head office for service records.
- An instant log of any faults that the unit has experienced and when they occurred.

The powerful Repair, Display & Mattress test modes allow ,at the touch of a button ,all product functions and SCU components to be tested without opening the SCU case. Also greatly reducing the time taken for fault diagnosis and eliminating time wasted trying to repair by component substitution.

If required for your service organisation the Data Exchange facility SCU repair & test information can be stored and downloaded to a PC on return to base thus reducing the need for and time taken writing or typing in service details.

The SDIU's own firmware can easily be updated to take enable it to be used with any new Linet models or updates to current model SCUs this allowing the SDIU to keep pace with the product range and being a service engineers tool for life.

### General Operation

If using the SDIU for the first time or after changing the batteries the SDIU data will need to be set up ,see relevant section of this manual.

The SDIU I.R link is very reliable and can operate a long distances from the SCU, it is however recommended to hold the SDIU approximately level with the SCU I.R window and at no more than 0.5Mtr from the SCU so that the SCU display panel can be seen and its mode of operation monitored.

If communication to the SCU is lost for any reason , the SDIU will always try to automatically recover the link. If communication cannot be automatically re-established you will need to return to the Link menu and press F2.

If there is no SCU in range or the SCU has no mains power connected or is not turned on, the display will show,



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and only the SDIU set up mode will be available.



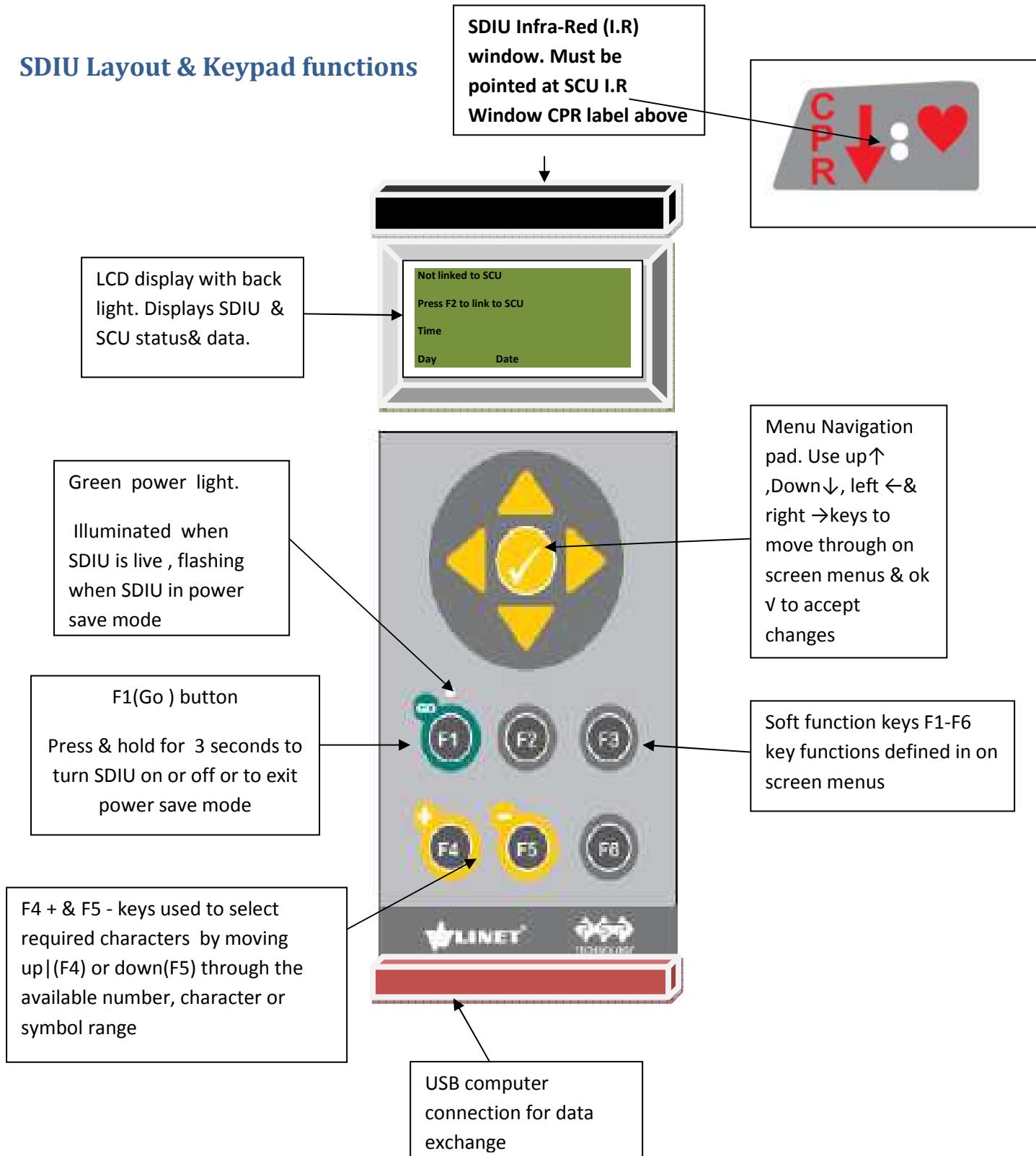
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## SDIU Layout & Keypad functions





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## Turn on & link to SCU

**F1(Go ) button Press & hold  
for 3 seconds to turn SDIU  
on**

**Single audio tone .Green  
power light comes on.  
Display comes on showing  
Link screen**

Not linked to SCU  
Press F2 to link to SCU  
Time  
Day Date

**Point SDIU1.R window at  
the IR window on the SCU  
Press F2 to connect.  
Link screen will show**

Linked to Model type  
SCU firmware version ver x.xx  
S/N xxxxxxxxxxxx

**Use → or ← keys on  
navigation pad to select  
required SDIU Mode**

Production data

Service data

Repair

Display test

Mattress test

Fault Log

SDIU Set up

**Use ↑or ↓ keys on  
navigation pad to enter  
required SDIU Mode  
menu**



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## Power Save Mode

If no SDIU control button is used for 3 minutes the SDIU will automatically go into power save mode to help conserve battery power.

In this mode the Green power LED will flash to indicate that Power save mode is active and the mains display will show no data.

Provided that it is not moved out of range of the SCU the I.R link will be maintained and the selected SDIU operating mode will continue to function.

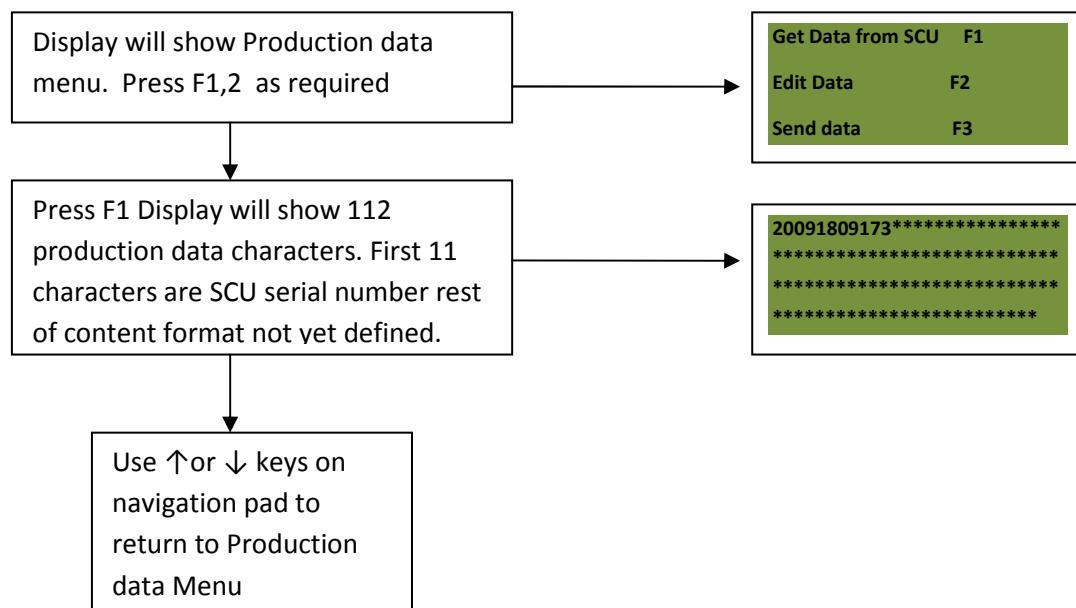
To exit power save mode and return to full display operation simply give the F1 button one short press..

## Production data Mode

This mode allows the operator to read & Edit the production data that has been loaded during the manufacture of the SCU. This data is made up of 112 characters , the first 11 being the SCU Serial number.

The data edit function is provided so that the service engineer can load the correct SCU production data into an SCU if the main control circuit board has to be replaced.

### View Production data





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## Edit Production Data

Display will show Production data menu. Press F1,2 as required

|                   |    |
|-------------------|----|
| Get Data from SCU | F1 |
| Edit Data         | F2 |
| Send data         | F3 |

Press F2 Display will show 112 production data characters. First 11 characters are SCU serial number rest of content format not yet defined. (defined)

|                  |
|------------------|
| 20091809173***** |
| *****            |
| *****            |
| *****            |

Use F4 & F5 keys on navigation pad to select data content & →← to move position

## Send Production data

Press F3 Display will go blank for a couple of seconds then show data sent ok

|                   |    |
|-------------------|----|
| Get Data from SCU | F1 |
| Edit Data         | F2 |
| Send data         | F3 |

|                     |
|---------------------|
| Data sent to SCU ok |
|---------------------|

Use ↑ or ↓ keys on navigation pad to return to Production data Menu



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## Service Data Mode

This mode allows the service engineer to review and update the service data stored in the SCU.

Display will show Service data menu.  
Press F1,2,,4 as required

|                         |    |
|-------------------------|----|
| Enter service data      | F1 |
| Get data from SCU       | F2 |
| Reset service indicator | F4 |

### Entering service data

**Press F1 Display will show Service data. Entry menu**  
**Today's date (SDIU fills this automatically)**  
**Service engineer code (SDIU fills this automatically)**  
**Service data 10 digits (Enter this data using F4,5&6)**  
**Run time since manufacture.**

02 Nov 09 @14.29  
Service Engineer code  
#####  
Run Time 0000000.3

Use ↑or ↓ keys on navigation pad to return to Service data Menu

|                         |    |
|-------------------------|----|
| Enter service data      | F1 |
| Get data from SCU       | F2 |
| Send data to SCU        | F3 |
| Reset service indicator | F4 |

Press F3 to send service data  
Then F1 or F2 to send or cancel

Send new service data entry to SCU?  
F1 send/F2 cancel

Bottom line of screen will show data send status  
When Data sent ok  
Use ↑or ↓ keys on navigation pad to return to Service data Menu

Send new service data entry to SCU?  
Sending Data

Send new service data entry to SCU?  
Data sent to SCU ok



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## Reading service data

**Press F2 on Service data.**

**Display will show last service data entry**

**Today's date**

**Service engineer code**

**Service data 10 digits**

**Run time since manufacture.**

|                         |    |
|-------------------------|----|
| Enter service data      | F1 |
| Get data from SCU       | F2 |
| Reset service indicator | F4 |

|                       |
|-----------------------|
| 02 Nov 09 @14.29      |
| Service Engineer code |
| #####                 |
| Run Time 0000000.3    |

**Use →←keys**

**to scroll through data content move position**

**Use ↑or ↓ keys on navigation pad to return to Service data Menu**



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## Reset Service Indicator

Press F4 on Service data.

Display will show ask you to confirm  
reset action

Press F1 to confirm

Display will then indicate if the Service  
indicator has been reset

Enter service data F1

Get data from SCU F2

Reset service indicator F4

Confirm reset

Service indicator

F1 confirm/F2 Cancel

SCU Service

indicator reset ok

Use ↑ or ↓ keys on navigation pad  
to return to Service data Menu

## Repair Mode

Display will show

**Status of push buttons of front panel**

**0= off \* = on. This can be used to test  
each button.**

**Order of indicators is**

GO, -, +, Mode, Mute

Press each button in turn to test

Display will then indicate if the Service

Button Status 0000

Air con Fitted

I3 mattress fitted

Back rest position



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**Display will show if the mattress is connected and the type of mattress**

Virtuoso, Virtuoso 2 or Precioso

Display will show the backrest position lowered or raised

|                    |      |
|--------------------|------|
| Button Status      | 0000 |
| Air con Fitted     |      |
| I3 mattress fitted |      |
| Back rest position |      |

**Use ↓ to move onto the next screen or ↑ or key on navigation pad to return to Repair Mode top level.**

**Display will show**

**Compressor on or off use F1 to switch state**

**Rotary valve position**

Use ↓ key on navigation pad to select & Use →← keys

scroll through positions

|                |               |
|----------------|---------------|
| Compressor off | F1            |
| Rotary Valve   | ? Degrees <E> |
| Buzzer test    | F3            |
| Led Test 1 off | F4,5,6        |

**Display will show Led test .**

**Select the number of the LED to be tested using F4 & F5**

**Use F6 to turn LED off/on**

**LED numbers are: Pressure adjust indicator 1-5, mode 6, static 7, Evaluation 8, Battery 9, Backrest 10, Seat 11, Service 12, CPR 13, Fault 14**



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## Display Mode

**The first Display mode screen** will show the status of all indicators on the SCU front panel

Mode = Alternating ,Static,Evaluation

F6 can be used to toggle the backrest indicator on/off.

Use →←keys to change F6 option to

|                     |          |        |
|---------------------|----------|--------|
| mmHg 00000          | Mode 000 |        |
| Back 0              | Seat 0   | CPR 0  |
| Fail 0              | Bat 0    | Serv 0 |
| F6 back rest toggle |          |        |

**Use ↑or ↓ keys on navigation pad to return to Display mode top level**  
**Menu or move down to next level**

**The second** Display mode screen will show the performance of the rotor valve

Run time = operating hours since manufacture

Last home = number of steps since home position was last passed.

Back lash= number of steps lost when rotor moves backwards

|                      |
|----------------------|
| SCU Data Display     |
| Run Time = 0000000.0 |
| Last home= xxxx      |
| Backlash=xxxx        |

**Use ↑or ↓ keys on navigation pad to return to Display mode top level**  
**Menu or move down to next level**



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## Mattress Test Mode

**Display will give the option to display or record mattress pressure readings**

**Select F2**

Display readings F2  
Record readings F3

## Display Readings

**Display will show current mattress pressure readings in mmHG**

**Press F1 to end test & return to first menu screen**

Pressure Reading  
A=00.00 B=00.00  
C=00.00 S=00.00  
F1 to end test

## Record readings

**Display will give the option to display or record mattress pressure readings**

**Select F3**

Display readings F2  
Record readings F3

**Display will give option to set recording time using F4/5**

**Press V to start test**

Record Reading  
Set time to record  
3 mins

**Display will show pressure readings and time left to run test**

**At end of test display will show test complete**

**Press F1 to exit test & return to Mattress test top level menu**

Pressure Reading  
A=00.00 B=00.00  
C=00.00 S=00.00  
Time to go =15 mins

Pressure Reading  
A=00.00 B=00.00  
C=00.00 S=00.00  
Test Complete press F1



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## Fault Log Mode

**Display will show fault log entries**

**Entry number**

**Run time when fault occurred**

**Fault Code**

**If applicable which cell(s) caused the fault**

**Use →←keys to scroll through log entries**

Fault Log 1  
Run Time 0000000.0  
Fault code  
Fault cells ABCS

**Use ↑or ↓ keys on navigation pad to return to Fault log top level Menu**

## SDIU set up Mode

This is the only mode that will be available if the SDIU is not linked to an SCU.

This mode is used to set the service engineers code & SDIU time & date .

**Display will show Back light setting**

**Use F4/F5 to set level from range :**

**Off,1-20,Full (note use minimum level necessary to save battery power)**

**Use ↓ keys on navigation pad to move onto next screen**

**Set LCD Back light**

**Back light =off**



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Display will show time & date menu

Use ↑↓ →← keys on navigation pad to select digit to change.

Use F4/F5 to change digit (note after replacing battery change year using F5 to 2099 then F4 to select 2009)

Set LCD Back light

Set SDIU Time & Date

12:54:43

Sun 1 Jan 0000

Use ↓ keys on navigation pad to move onto next screen

Press √ to Select first service engineer code digit. Use F4/F5 to change value

Set LCD Back light

Set service engineer

#####

Use ↓ keys on navigation pad to move onto next screen

Press √ to select language field

Use F4/F5 to language type

Press √ to confirm selection

Set LCD Back light

Current Language

English

Use ↑ or ↓ keys on navigation pad to return to Fault log top level Menu

## Battery Mode

Not yet available



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## Data Exchange with a PC

Not yet available

## Turning off the SDIU

To Turn off your SDIU simply return to the Link Menu ,press F2 then Press and hold the F1 button for 3 seconds . There will be a short single audio tone and the mains display and green power Led will go off.

Do not leave the SDIU in Power save mode when not in use as this will greatly reduce the life of the internal batteries.

## Batteries

The SDIU is power by two type AA 1.5 v Alkaline batteries. Depending on the length of time the SDIU is turned on for ,should provide at least twelve months of average daily usage. It is not recommended to use rechargeable batteries as they will changing more often and the SDIU set up data will need to be reset each time the batteries are changed.

The Batteries are accessed via the battery compartment cover on the rear of the SDIU , there is no need to open the main SDIU case.

It is recommended that Batteries should be inspected once a year to ensure that no leakage or corrosion has occurred. If there any signs or this occurring both batteries should be replaced immediately after cleaning the battery terminals.

Alkaline batteries should be disposed of in accordance with your local environmental waste policies & procedures

## SDIU maintenance & Technical support

### General Maintenance

### Software updates

### Technical support